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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,964	03/07/2005	Shinichi Hamaguchi	71971-140	7980

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WASHINGTON, DC 20005-3096

EXAMINER
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PATEL, GAUTAM

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/526,964	<b>Applicant(s)</b> HAMAGUCHI ET AL.	
	<b>Examiner</b> Gautam R. Patel	<b>Art Unit</b> 2627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                 | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

### DETAILED ACTION

1. Claims 1-9 are pending for the examination.

#### Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

#### Claim Rejections - 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-5 and 7-9 are rejected under 35 U.S.C. § 102(e) as being anticipated by Kim et al., US. Patent 7,283,440 (hereafter Kim).

As to claim 1, Kim discloses the invention as claimed [see Figs. 4-9, especially 7 & 9] including an emission light source, a diffraction element, a hologram element and a plurality of photodetectors, comprising:

an emission light source [fig. 4, units 31 & 71] for emitting two or more light components of different wavelengths [650 and 780 nm] [col. 12, lines 1-23].

a diffraction element [fig. 4, unit 40] for diffracting the emitted light components [col. 10, line 37 to col. 11, line 67];

a light collector [fig. 4, unit 80] for collecting the light components output from the diffraction element [col. 10, line 37 to col. 11, line 67];

a hologram element [fig. 4, unit 73 and 63] for diffracting the light components collected by the light collector and then reflected by an information recording medium [col. 10, line 37 to col. 11, line 67];

a plurality of photodetectors [fig. 6] for receiving the diffracted light components output from the hologram element; and

operation means [fig. 4, unit 100] for performing an operation on outputs of the plurality of photodetectors, wherein the plurality of photodetectors are at least eight photodetectors which are necessary for the execution of the three-beam method, the phase difference method, and the push-pull method, and the operation means includes a switch [fig. 7, unit 95 & fig. 9, unit 117] for switching between a terminal for obtaining a sub signal of the three-beam push-pull method and a terminal for obtaining a tracking signal of the three-beam method

NOTE: Unit 73 serves the purpose of the hologram element for diffracting light.

4. The aforementioned claim 3, recites the following elements, inter alia, disclosed in Kim:  
a light receiving region which includes the at least eight photodetectors [fig. 2 & 6] has a division line which extends in a direction generally parallel to a track direction of the information recording medium, and the division line extends across the light receiving region from a front side to a back side of the track direction to divide photodetectors which are adjacent in a direction generally perpendicular to the track direction [fig. 6; col. 6, line 62 to col. 7, line 43].

5. The aforementioned claim 4, recites the following elements, inter alia, disclosed in Kim:  
the first terminal is a terminal for obtaining a sub signal of the three-beam push-pull method; and  
the second terminal is a terminal for obtaining a tracking signal of the three-beam method [col. 6, line 63 to col. 8, line 62].

6. The aforementioned claim 5, recites the following elements, inter alia, disclosed in Kim:  
the plurality of photodetectors are all placed away from the emission light source and placed at one side with respect to the position of the emission light source which serves as a reference [col. 6, line 63 to col. 8, line 62].

7. The aforementioned claim 7, recites the following elements, inter alia, disclosed in Kim:

the first emission light source and the second emission light source are placed such that a line between these light sources extends generally perpendicular to a track direction of the recording information medium [col. 6, line 63 to col. 8, line 62].

NOTE: These kinds of placements are inherently done depending upon arrangement on the board.

8. The aforementioned claim 8, recites the following elements, inter alia, disclosed in Kim:  
the first emission light source and the second emission light source are placed such that a line between these light sources extends generally parallel to a track direction of the recording information medium [col. 6, line 63 to col. 8, line 62].

NOTE: These kinds of placements are inherently done depending upon arrangement on the board.

9. As to claim 9, it is rejected for the similar reasons set forth in the rejection of claim 1, above.

### **Claim Rejections - 35 U.S.C. § 103**

10. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim as applied to claims 1 and 9 above.

As to claim 2, it is rejected for the similar reasons set forth in the rejection of claim 1, above. As to the added limitations of:

the emission light source includes a first emission light source for emitting light of a first wavelength, and a second emission light source for emitting light of a second wavelength which

is different from the first wavelength, the second emission light source being placed away from the first emission light source [col. 10, line 37 to col. 12, line 23];

the hologram element includes at least two diffraction grating regions [fig. 4, units 40 and 73], and at least one of the plurality of photodetectors is placed at a position where diffracted light which is obtained by reflecting light emitted by the first emission light source by the information recording medium and diffracting the reflected light by the hologram element [col. 6, lines 9-38; col. 9, line 48-64 & col. 11, lines 18-55].

Regarding claim 2, Kim discloses everything as shown above. Kim does not specifically disclose that diffracted light which is obtained by reflecting light emitted by the second emission light source by the information recording medium and diffracting the reflected light by the hologram element are commonly received. Kim teaches that these signals are received. The last limitation in claim 2 does not define a patentable distinct invention over that in Kim since both the invention as a whole and Kim is directed to selecting the 3-beam method and pus-pull method. The signals being commonly received presents no new or unexpected results, so long as the proper method is selected based on the type disc [DVD or CD]. Therefore, to have signals arrived at the same time would have been routine experimentation and optimization in the absence of criticality.

11. As to claim 6, Kim teaches plurality of photo-detectors units. Kim fails to teach the exact placement of these sections with respect to light source. "Official Notice" is taken that both the concept and the advantages of providing photo-sections near and around light sources are well known and expected in the art [for better signal processing quality]: It would have been obvious to provide some of the photo-detectors on one side of the laser in Kim's system as these photo-detectors particular placement are known to provide the system to with better signal processing capability at the same time and thereby saving time in processing of the signals. These concepts are well known in the art and do not constitute a patentably distinct limitation, per se [M.P.E.P. 2144.03].

#### **ALTERNATE REJECTION**

### Claim Rejections - 35 U.S.C. § 103

12. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchiyama US. Patent 6,975,576 (hereafter Uchiyama) in view of Tadano et al., US. Patent 6,822,209 (hereafter Tadano).

As to claim 1, Uchiyama discloses the invention as claimed [see Figs. 1-3, especially 1 & 6] including an emission light source, a diffraction element, a hologram element and a plurality of photodetectors, comprising:

an emission light source [fig. 1, unit 11] for emitting two or more light components of different wavelengths [650 and 780 nm] [col. 5, lines 33-50].

a diffraction element [fig. 1, unit 12] for diffracting the emitted light components [col. 5, lines 33-50];

a light collector [fig. 1, unit 2A] for collecting the light components output from the diffraction element [col. 5, lines 33-64];

a hologram element [fig. 1, unit 13] for diffracting the light components collected by the light collector and then reflected by an information recording medium [col. 5, lines 33-64];

a plurality of photodetectors [fig. 2a] for receiving the diffracted light components output from the hologram element; and

operation means [fig. 6] for performing an operation on outputs of the plurality of photodetectors, wherein the plurality of photodetectors which are necessary for the execution of the three-beam method, the phase difference method, and the push-pull method, and the operation means includes a switch [fig. 6, units 312 & 322] for switching between a terminal for

obtaining a sub signal of the three-beam push-pull method and a terminal for obtaining a tracking signal of the three-beam method [col. 5, line 33 to col. 6, line 60; col. 8, lines 1-57].

Uchiyama discloses all of the above elements, including a six section photodetector. Uchiyama does not specifically disclose that photodetector has eight sections to the extent claimed.

However, it is well known in the art to have provided eight photo-sections depending upon quality and precision necessary at expense of extra sections. Also more importantly Tadano clearly discloses that it well known in the art to use eight photo-sections [col. 7, line 55 to col. 8, line 36; and col. 8, line 57 to col. 9, line 6].

Both Uchiyama and Tadano are interested in improving the quality of signals and change the tracking method based on the type of disc and switch to appropriate signal processing method. Both show holograms with multiple sections.

One of ordinary skill in the art at the time of invention would have realized that the high recording density is a good feature to have in the system of Uchiyama.

Therefore, it would have been obvious to have used an eight section photodetector in the system of Uchiyama as taught by Tadano because one would be motivated to increase recording capacity system of Uchiyama and also provide better signal controls and improve quality of the signal by providing more accurate signals to photodetectors processing device [col. 3, lines 37-48; Tadano].

13. As to claim 2, it is rejected for the similar reasons set forth in the rejection of claim 1, above. As to the added limitations Uchiyama discloses:

the emission light source includes a first emission light source for emitting light of a first wavelength, and a second emission light source for emitting light of a second wavelength which is different from the first wavelength, the second emission light source being placed away from the first emission light source [col. 5, line 33 to col. 6, line 60; col. 8, lines 1-57];

the hologram element includes at least two diffraction grating regions [fig. 1, unit 13], and at least one of the plurality of photodetectors is placed at a position where diffracted light



which is obtained by reflecting light emitted by the first emission light source by the information recording medium and diffracting the reflected light by the hologram element [col. 5, line 33 to col. 6, line 60; col. 8, lines 1-57]; and

diffracted light which is obtained by reflecting light emitted by the second emission light source by the information recording medium and diffracting the reflected light by the hologram element are commonly received [col. 5, line 33 to col. 6, line 60; col. 8, lines 1-57].

14. The aforementioned claim 3, recites the following elements, inter alia, disclosed in Tadano:

a light receiving region which includes the at least eight photodetectors [fig. 3] has a division line which extends in a direction generally parallel to a track direction of the information recording medium, and the division line extends across the light receiving region from a front side to a back side of the track direction to divide photodetectors which are adjacent in a direction generally perpendicular to the track direction [col. 7, line 55 to col. 8, line 36; and col. 8, line 57 to col. 9, line 6].

15. The aforementioned claim 4, recites the following elements, inter alia, disclosed in Uchiyama:

the first terminal is a terminal for obtaining a sub signal of the three-beam push-pull method; and

the second terminal is a terminal for obtaining a tracking signal of the three-beam method [col. 5, line 33 to col. 6, line 60; col. 8, lines 1-57].

16. The aforementioned claim 5, recites the following elements, inter alia, disclosed in Uchiyama:

the plurality of photodetectors are all placed away from the emission light source and placed at one side with respect to the position of the emission light source which serves as a reference [col. 5, line 33 to col. 6, line 60; col. 8, lines 1-57].

17. As to claim 6, Uchiyama and Tadano teach plurality of photo-detectors units. Combination fails to teach the exact placement of these sections with respect to light source. "Official Notice" is taken that both the concept and the advantages of providing photo-sections near and around light sources are well known and expected in the art [for better signal processing quality]. It would have been obvious to provide some of the photo-detectors on one side of the laser in Kim's system as these photo-detectors particular placement are known to provide the system to with better signal processing capability at the same time and thereby saving time in processing of the signals. These concepts are well known in the art and do not constitute a patentably distinct limitation, per se [M.P.E.P. 2144.03].

18. The aforementioned claim 7, recites the following elements, inter alia, disclosed in Uchiyama:

the first emission light source and the second emission light source are placed such that a line between these light sources extends generally perpendicular to a track direction of the recording information medium [col. 5, line 33 to col. 6, line 60; col. 8, lines 1-57].

NOTE: These kinds of placements are inherently done depending upon arrangement on the board.

19. The aforementioned claim 8, recites the following elements, inter alia, disclosed in Uchiyama:

the first emission light source and the second emission light source are placed such that a line between these light sources extends generally parallel to a track direction of the recording information medium [col. 5, line 33 to col. 6, line 60; col. 8, lines 1-57].

NOTE: These kinds of placements are inherently done depending upon arrangement on the board.

20. As to claim 9, it is rejected for the similar reasons set forth in the rejection of claim 1, above.

**Other prior art cited**

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Ishibashi et al. (US. Patent 6738326)
- b) Noda (US. patent 5936920)
- c) Yangawa (US. patent 5363358)

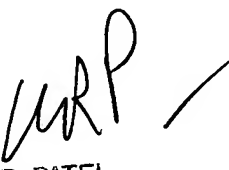
**Contact information**

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is 571-272-7625. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2600) where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Dwayne Bost, can be reached on (571) 272-7023.

Any inquiry of a general nature or relating to the status of this application should be directed to the Electronic Business Center whose telephone number is 866-217-9197 or the USPTO contact Center telephone number is (800) PTO-9199.

  
GAUTAM R. PATEL  
PRIMARY PATENT EXAMINER

Gautam R. Patel  
Primary Patent Examiner  
Group Art Unit 2627

January 14, 2008